

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

Work Order ID 144592

April 21, 2016 2:06:15 PM

144592

Page 2

Item ID: D3688-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Stud

Start Date: 4/27/2016 Start Qty: 6.00

6

Cust Item ID:

Required Date: 5/7/2016 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC8- Inspect parts - second check	0.00				7	0		49 9-89
170									16/05/30
QC	Memo	0.12							
Quality Control	100% CHECK,CHECK ALL DIMENSIONS AND THREAD FIT								
180		0.00							
180	PURCHASING					7			CY16106124
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 32647 LPI Per ASTM 1417 LEVEL								
	2Certificate of conformaty is required								
190	Receive & Inspect for Damage & Mat'l Certs	0.00							
190						7			CY16106124
Packaging	Memo	0.12							
Packaging	Ensure certificate of conformity is attached								

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																											
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OTHER : ☐					

Picklist Print

April 21, 2016 2:06:14 PM

Page 1

Work Order ID: 144592

144592

Parent Item: D3688-1

D3688-1

Parent Item Name: Stud

Start Date: 4/27/2016

Required Date: 5/7/2016

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP Rev:A New Issue 08-01-29 JLM Verified By:EC
IPP Rev:B Material Change 09-01-07 JLM Verified By:EC
IPP Rev:C Added note on Step 2 09-01-26 JLM Verified By:EC
IPP REV:D 10.07.06 revo step 130-160 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174PH-H900R1.000		Purchased		No		100	f	56.5000	1.087	6.865263			

M174PH-H900R1 000

17-4SS H900 ROUND BAR 1.00

Location

Loc Qty

Loc Code

MAT031

56.5

~~m127334~~

16.5

~~m128314~~

40

DAS

45

9-89

2016-5-26

~~7.5~~
7.5

DQA: _____ Date: _____



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OTHER : ☐					

DART AEROSPACE LTD		Work Order: 144592
Description: Stud		Part Number: D3688-1
Inspection Dwg: D3688 Rev: D		Page 1 of 1

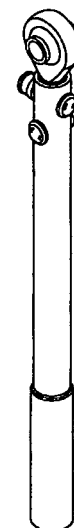
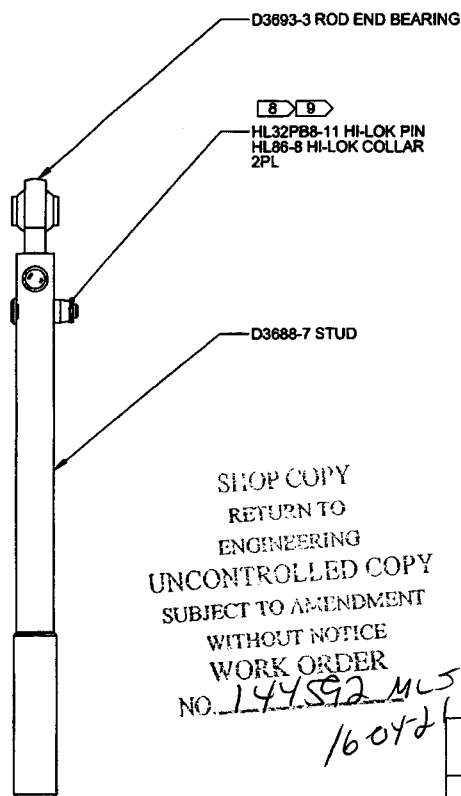
FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.695	+/-0.010	0.690	✓		cal	OK-01
0.6213	+0.004/-0.000	0.625	✓		cal + pin	OK-01 + Shop
1.25	+0.000/-0.03	1.236	✓		caliper	OK-01
0.825	+/-0.010	0.824	✓	✓	cal	OK-01
R0.03	+/-0.030	0.03	✓		rad 6	Shop
0.11 Ref	+/-0.030	0.11	✓		caliper	OK-01
90°	0.5°	90°	✓		Angle	Shop
Ø0.216	+0.005/-0.001	0.216	✓		caliper	OK-01
1.31	+/-0.030	1.315	✓		"	"
1.65	+/-0.030	1.634	✓		"	"
0.870	+0.000/-0.010	0.865	✓		"	"
Ø0.659	+0.000/-0.015	0.649	✓		mic 01	OK-02
11.573	+/-0.015	11.570	✓		caliper	CNC-02
2.90	+/-0.030	2.900	✓		caliper	OK-01
3/4-16UNF-2A	N/A	OK	✓		WT	OK
0.075 x 45°	+/-0.010 x 0.5°	0.075 x 45°	✓		depth 6	OK-01
0.370	+0.000/-0.010	0.365	✓		caliper	OK-01
Ø0.739	+0.005/-0.001	0.744	✓		mic 01	OK-02
R0.25	+/-0.030	0.250	✓		rad 6	Shop
R0.50	+/-0.030	0.500	✓		"	"
MOW.0.04	MAX. 0.7737 min. 0.7687	0.7723	✓		mic 01	OK-02

Measured by: 45	Audited by: mm L	Preliminary Approval:
Date: 2016-05-26	Date: 16/05/16	Date:

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ	
B	09.11.04	Dwg Rev updated	KJ	
C	13.02.27	Dwg Rev updated	KJ	AA

ITEM	QTY -047	P/N	DESCRIPTION
1	X	D3688-047	STUD ASSEMBLY
2	1	D3688-7	STUD
3	2	HL32PB8-11	HI-LOK PIN
4	2	HL86-8	HI-LOK COLLAR
5	1	D3693-3	ROD END BEARING



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 144592 MLS
16042

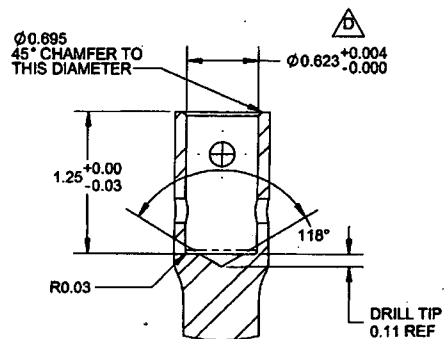
RELEASED
2013-01-22

D3688-047 STUD ASSEMBLY

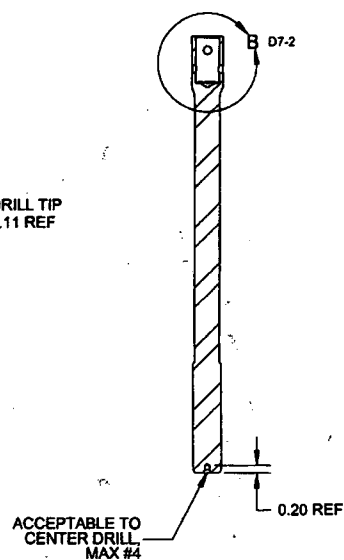
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART ASSEMBLY P/N D3688-047 PER DART QSI 044 6.6 (REMOVABLE TAG AND POLY BAG)
- 7) WEIGHT: 1.03 lbs
- 8) ALIGN THE PILOT HOLES IN D3693-3 WITH PILOT HOLES IN D3688-7. DRILL OUT EACH HOLE USING A P/N 13-420 PILOTTED DRILL (0.2314 DIA./0.2158 PILOT). REAM EACH HOLE USING A P/N 44-300 STEP REAMER (0.247 DIA./0.2314 PILOT). CLEAN AND DEBURR ALL HOLES PRIOR TO ASSEMBLY.
- 9) ASSEMBLE D3693-3 WITH D3688-7 USING HYSOL EA934NA OR MAGNOBOND 6398 ADHESIVE BETWEEN MATING SURFACES.

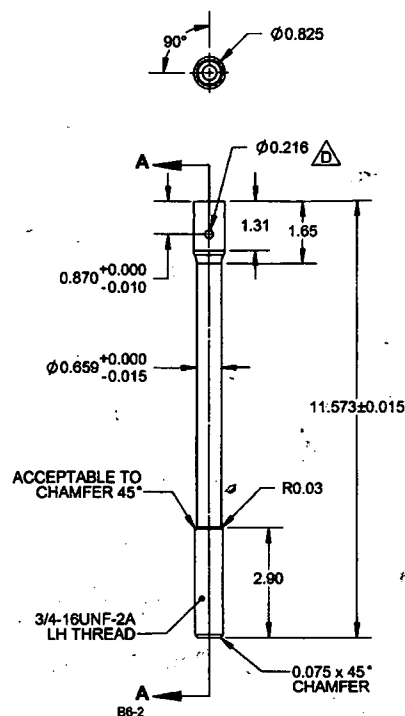
D	ADD D3688-047 STUD ASSY: Ø0.216 PILOT HOLE WAS Ø0.189 (ZN D2-2, D4-2, D2-3, D3-3, D2-4, D4-4, D2-5, D3-5); Ø0.623 WAS Ø0.625 (ZN D7-2, D7-3, D7-4). RE-FORMAT NOTES SECTION AS PER QSI 043 (ZN A8-1); REF NCR12-2074	DB	12.12.05
C	0.20 WAS 0.16 (ZN B5-1, B5-2, B6-3, B5-4); CENTER DRILL #4 WAS CENTER DRILL #2 (ZN B6-1, B6-2, B6-3, B6-4); UPDATE NOTE 8 TO REF QSI (ZN A8-1, A8-2, A8-3, A8-4); CHANGE TO 17-4PH H-300 (ZN A8-1, A8-2, A8-3, A4-4); REDUCE LENGTH ON D3688-1 FROM 12.073 TO 11.573 (ZN C3-1) BASED ON PROTOTYPE INSTALL; Ø0.695 WAS Ø0.695 (ZN D8-1, D8-2, D8-3); Ø0.508 WAS Ø0.478 (ZN D8-4); REFORMATTED TO CURRENT DWG STANDARDS	RF	09.09.09
B		RF	08.11.24
A	NEW ISSUE	RF	08.05.22
REV.	DESCRIPTION	BY	DATE
DESIGN	DB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DB		
CHECKED	MB	DRAWING NO.	REV. D
MFG. APPR.	JLM	D3688	SHEET 1 OF 5
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	STUD	NTS
DATE	12.12.05	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR FOR THE DISSEMINATION TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



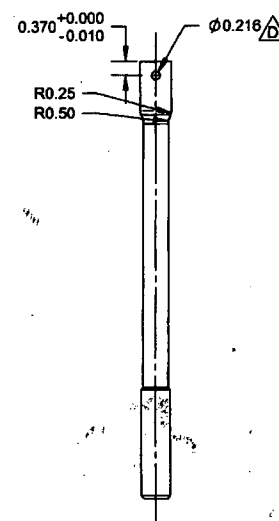
DETAIL B 08-2
SCALE 3X



SECTION A-A
B4-2



D3688-1 STUD

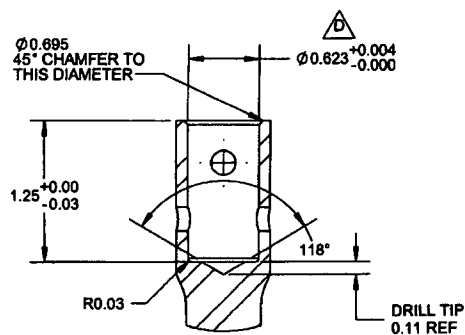


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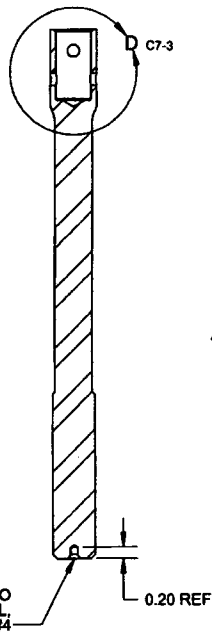
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.24 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MB	DRAWING NO.	REV. D
MFG. APPR.	JLM	D3688	SHEET 2 OF 5
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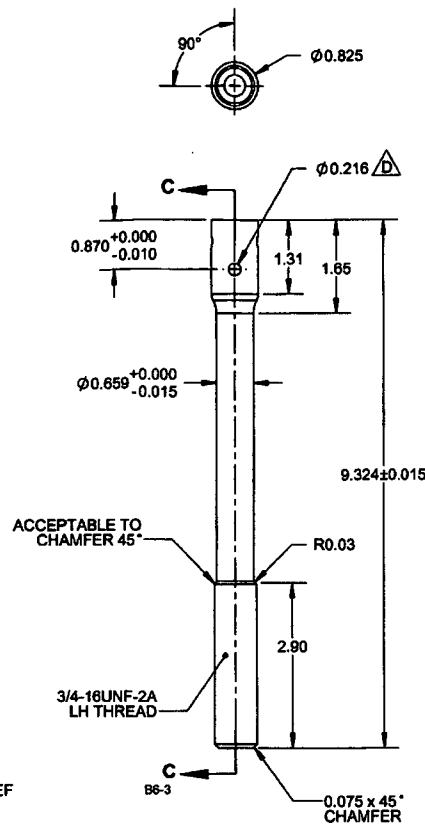
RELEASED
2013-01-22



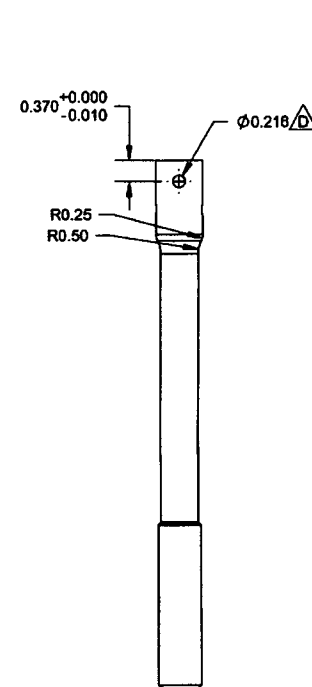
DETAIL D D6-3
SCALE 2X



SECTION C-C
D4-3



D3688-3 STUD



NOTES:

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5843 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.97 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MB	DRAWING NO.	REV. D
MFG. APPR.	JLM	D3688	SHEET 3 OF 5
APPROVED	WJ	TITLE	SCALE
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2013-01-22

45° CHAMFER TO THIS DIAMETER
 $\phi 0.695$
 $\phi 0.623^{+0.004}_{-0.000}$

1.25 $^{+0.00}_{-0.03}$
 118°

R0.03
 DRILL TIP
 0.11 REF

DETAIL F D6-4
 SCALE 3X

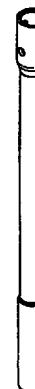
F D7-4
 ACCEPTABLE TO CENTER DRILL
 MAX #4
 0.20 REF

SECTION E-E D4-4

90°
 $\phi 0.825$

E
 $\phi 0.216$
 1.31
 1.65
 $0.870^{+0.000}_{-0.010}$
 $\phi 0.659^{+0.000}_{-0.015}$
 11.920 ± 0.015
 ACCEPTABLE TO CHAMFER 45°
 R0.03
 2.90
 3/4-16UNF-2A
 LH THREAD
 E
 B6-4
 0.075 x 45°
 CHAMFER

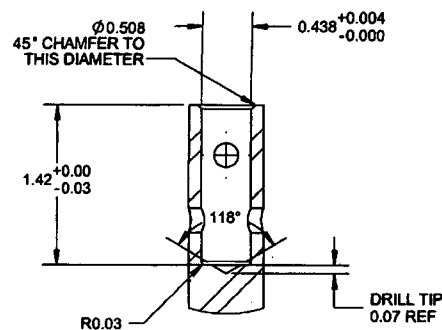
0.370 $^{+0.000}_{-0.010}$
 $\phi 0.216$
 R0.25
 R0.50



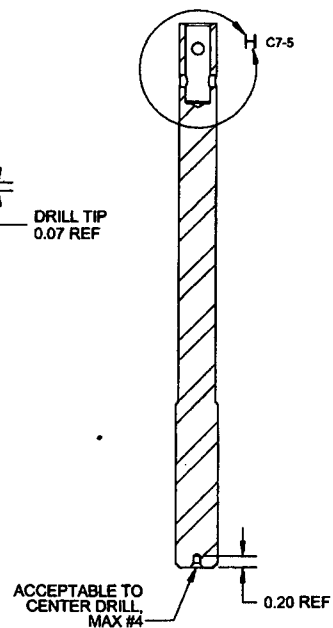
RELEASED
 2013-01-22

- NOTES:**
 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
 2) FINISH: NONE
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 6) IDENTIFICATION: NONE
 7) WEIGHT: 1.22 lb
 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

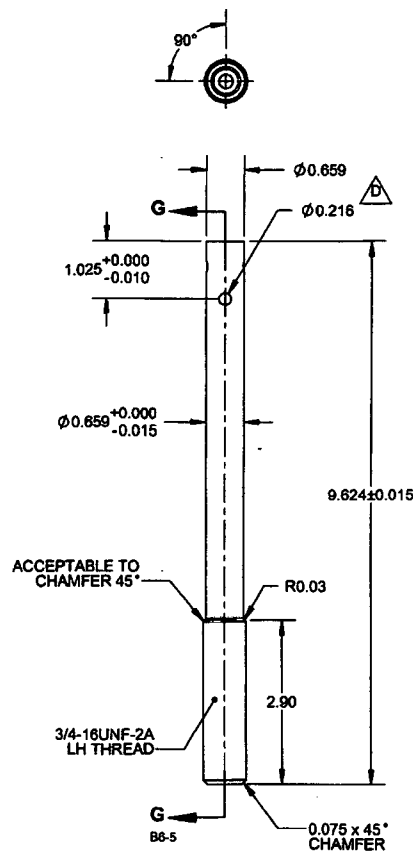
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MB	DRAWING NO.	REV. D
MFG. APPR.	JLM	D3688	SHEET 4 OF 5
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	STUD	NTS
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DETAIL H
SCALE 2X



SECTION G-G B4-5



D3688-7 STUD

NOTES:

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.96 lb
- 8) LPI PER QSI 038 4.1.1 (ASTM E1417 LEVEL 2)

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DB		
CHECKED	MB	DRAWING NO.	REV. D
MFG. APPR.	JLM	D3688	SHEET 5 OF 5
APPROVED		TITLE	SCALE
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2013-01-22



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO32647

Purchase Order Date 6/8/2016

PO Print Date 6/16/2016

Page Number 4 of 5

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact

Ship To Phone

Ship Via: Delivered

Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Total: \$123.30

9	145286	D119-796-241 CROSSTUBE	6/8/2016	1.00	\$123.30	\$123.30
			Yes			
			6/8/2016			

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$123.30

10	144783	D3689-1 SLEEVE	6/8/2016	12.00	\$10.28	\$123.30
			Yes			
			6/8/2016			

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$123.30

11	144592	D3688-1 STUDS	6/8/2016	7.00	\$17.61	\$123.30
			Yes			
			6/8/2016			

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

C216106116

Note:

6/16/2016

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO28523	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: 32647
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 2

Work Required:

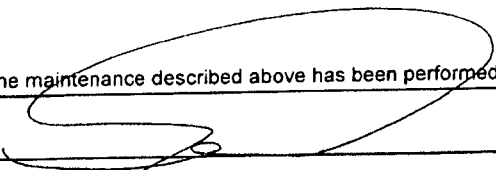
CARRY OUT NDT ON 19 PARTS AS PER PO32647

12 SLEEVES, ITEM ID# D3689-1 , WORK ORDER ID# 144783

7 STUDS, ITEM ID# D3688-1 , WORK ORDER ID# 144592

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-13						JUN 10 2016	
NO CRACK FOUND							
PEN. ZL-56, MPO13600, UV M-20141, CLEANER SKC-S MPO13923 , DEV. MPO11715							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:		ACA/SCA Stamp 	Date:
Name: RAFIK MELIKIAN			JUN 10 2016